



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,238	02/25/2002	Masanobu Hidchira	8039-1002	3861

466 7590 05/05/2003

YOUNG & THOMPSON  
745 SOUTH 23RD STREET 2ND FLOOR  
ARLINGTON, VA 22202

EXAMINER

DI GRAZIO, JEANNE A

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 05/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/081,238

Applicant(s)

HIDEHIRA ET AL.

Examiner

Jeanne A. Di Grazio

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 Febraury 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

Priority to Japanese Patent Application No. 2001-049492 (Feb. 23, 2001) is claimed.

### ***Claim Objections***

Claim 3 is objected to because of the following informality: "insulting films" should read as "insulating films." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) in view of Jun et al. (US '641).

Per claims 1 and 4: Ohtani has a light interrupting film on an insulating film, specifically, Ohtani has a metal wiring that serves as an opaque auxiliary capacitor and an opening is formed in the metal wiring through which a black matrix is exposed (Col. 5, Lines 33-38 and Col. 6, Lines 14-17). The metal wiring with the contact hole opening overlaps a disclination region (Col. 6, Lines 24-27). Ohtani does not appear to have a pixel electrode formed on an insulating layer and electrically connected to an end portion of the wiring through a contact hole; however, Jun has pixel electrodes electrically connected to opaque electrodes through an insulating layer (Col. 4, Lines 50-57). It would have been obvious to one of ordinary skill in the art at the time the

Art Unit: 2871

invention was made to modify Ohtani in view of Jun for enhanced aperture ratio while preventing a lowering of display quality (See Jun at Col. 2, Lines 36-43).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) and Jun et al. (US '641) as applied to claims 1 and 4 above and further in view of Sakamoto et al. (US 2002/0089615 A1).

Per claims 2 and 3: Ohtani does not appear to have an insulating film of a laminate of a passivation film, color layer, and flattening film, respectively, and that have individual contact holes formed therein and an overall tapered shape; however, Sakamoto discloses a prior art active matrix display that has Applicant's arrangement [0011]. In Sakamoto, the color filter and black matrix are embedded completely in the flattening film and the flattening film and passivation films have contact holes; thus, the color filter layer must also have a contact hole therethrough. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ohtani in view of Sakamoto for reduced process steps and for manufacturing simplicity.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) and Jun et al. (US '641) as applied to claims 1-4 above and further in view of Kawakami et al. (US 2002/0008805 A1).

Per claim 5: Ohtani does not appear to have a contact hole in a pixel at a downstream rubbing direction with respect to the switching element of other pixel adjacent to the pixel; however, Kawakami has a rubbing direction coinciding with the slit direction of apertures in pixels [0071 and 0074]. It would have been obvious to one of ordinary skill in the art at the time

Art Unit: 2871

the invention was made to modify Ohtani in view of Kawakami to suppress the occurrence of static electricity and dust particles [See 0071 and 0074].

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) and Jun et al. (US '641) as applied to claims 1-5 above and further in view of Murade et al. (US '327 B1).

Per claim 6: Ohtani does not appear to have a scanning line with a projecting portion overlapping a contact hole and or a region where disclination occurs and shielding light; however, Murade has a scanning line overlapping a contact hole and within a disclination region (Col. 3, Lines 25-27 and Lines 30-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ohtani in view of Murade to prevent disclination (Id.).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) and Jun et al. (US '641) as applied to claims 1-6 above and further in view of Moon (US 2002/0105609 A1).

Per claim 7: Ohtani does not appear to have a black matrix overlapping data lines and with a portion overlapping a region in the pixel between the data line and projecting portion as claimed by Applicant; however, Moon has a light absorption layer overlapping pixel, gate, and data lines [0039]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ohtani in view of Moon for increased aperture ratio [0039].

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) and Jun et al. (US '641) as applied to claims 1-7 above and further in view of Tani (US '735 B1).

Art Unit: 2871

Per claim 8: Ohtani does not appear to have a projecting portion forming electrostatic capacitance between a wiring; however, Tani has a spacer between a black matrix and scan line that serves as an auxiliary capacitance (Col. 8, Lines 2-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ohtani in view of Tani so that display quality is not deteriorated (Col. 8, Lines 20-24).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) in view of Jun et al. (US '641).

Per claim 9: Ohtani has a light interrupting film on an insulating film, specifically, Ohtani has a metal wiring that serves as an opaque auxiliary capacitor and a step of forming an opening in the metal wiring through which a black matrix is exposed (Col. 5, Lines 33-38 and Col. 6, Lines 14-17). Ohtani includes the step of forming the metal wiring with the contact hole opening overlapping a disclination region (Col. 6, Lines 24-27). Ohtani does not appear to have the step of forming a pixel electrode formed on an insulating layer and electrically connected to an end portion of the wiring through a contact hole; however, Jun has the step of pixel electrodes electrically connected to opaque electrodes through an insulating layer (Col. 4, Lines 50-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ohtani in view of Jun for enhanced aperture ratio while preventing a lowering of display quality (See Jun at Col. 2, Lines 36-43).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (US '014 B1) and Jun et al. (US '641) as applied to claim 9 above and further in view of Sakamoto et al. (US 2002/0089615 A1).

Art Unit: 2871

Per claims 10 and 11: Ohtani does not appear to have an insulating film of a laminate of a passivation film, color layer, and flattening film, respectively, and that have individual contact holes formed therein and an overall tapered shape; however, Sakamoto discloses a prior art active matrix display that has Applicant's steps [0011]. In Sakamoto, the color filter and black matrix are embedded completely in the flattening film and the flattening film and passivation films have contact holes; thus, the color filter layer must also have a contact hole therethrough. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ohtani in view of Sakamoto for reduced process steps and for manufacturing simplicity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG  
April 29, 2003

  
TOANTON  
PRIMARY EXAMINER